

Technical Regulations NORDIC EUROPEAN ZONE (NEZ) CROSS KART 2020

Black text = existing text 2019
Black text ~~cross-off~~ = 2019 text cancelled from 2020
Red Text = New text from 2020

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Technical Regulations NEZ CROSS KART (CK-T)

Application of the technical regulations

When you are reading the technical regulations keep this in mind:

Read the regulations and if it does not specifically state that something is allowed then it means that no changes are allowed from the original specifications.

This means that what is not explicitly allowed is to be considered as banned.

CK-T 0 GENERAL

The NEZ may make exceptions or changes to the regulations during the season if there is a need for it due to safety or any other reason. Where nothing else is stated the same regulations apply to all classes.

CK-T 0.1 General regulations

CK-T0.1.1 General

It is the competitor's responsibility to make sure the car complies with the regulations in full during the entire competition.

CK-T0.1.2 Exemptions from the regulations

ASN permit approvers, event organisers, clerk of the course, judges and technical scrutinizers are not allowed to decide about or make exemptions to the NEZ,s sporting- or technical regulations.

CK-T 0.1.3 Photocells (According organizer)

Receivers and photocells and any other electrical equipment shall be placed in areas approved by the circuit inspection or outside the fencing of the circuit.

CK-T 0.1.4 Cylinder capacity

The cylinder capacity is the volume generated when the piston moves up and down.

When calculating the cylinder capacity the following formula is used:

$$V = 0.7854 \times d^2 \times s \times n$$

V = volume

d = diameter of cylinder

s = stroke

n = number of cylinders

CK-T 0.2 Fuel regulations

All classes

Methanol as well as E 85 is prohibited as fuels during practise and competition in crosskart. Only commercial fuel is allowed. (Not aviation fuel etc.) For fuel testing=0.3 liter.

85 and 125 class

The only legal fuel is Aspen+

250 and 650 class

The only legal fuels Drivers can use Aspen R (102) **and Aspen +.**

CK-T 0.3 Regulations about by-pass exhaust noise measurement

It is recommended to make noise measurements and shall be carried out at a competition to such extent that the prescribed maximum noise level is not exceeded. Measurements take place during practice/competition at the circuit when the car is moving. It is suggested to give a warning about possible exclusion from competition a car if the car's exhaust by-pass noise level exceeds the maximum level of 95dB (A).

Measurements shall be carried out with a sound level meter of precision type class 1 or better that meets the requirements in "International Electro technical Commission" publication 651, ("IEC"). Measurements will be carried out with sound level meter in position "SLOW". The sound level meter is to be calibrated before measurement.

CK-T 0.4 Common safety regulations

Safety equipment for all crosskarts (cars) competing in classes that have been approved by NEZ

CK-T 0.4.1 Safety harness

CK-T 0.4.1.1 Types

Minimum requirement is a 4 point harness or usage of NASCAR type harness 5 and 6 point harness is recommended. 4 point harness has 4 separate mounting points, 5 point harness has 5 separate mounting points, 6 point harness has 6 separate mounting points, except Nascar type harness where is allowed 3 mounting points where on the two shoulder harness is allowed 1 mounting point and sub-strap belts of 6 point harnesses which can be mounted together with lap belts. The mounts shall be well dimensioned and attached securely to the car's space frame (chassis) with min. 8 mm screws with locknut. The safety harness may be shortened after the strapping point however shortened ends must be melted, folded and sewn with suitable thread. - Homologated harnesses are recommended in NEZ competitions.

CK-T 0.4.1.2 Use

The Safety harness must be kept in its homologated version and comply with the manufacturer instructions. Harnesses must be replaced after a severe collision or if the fabric is damaged, stretched or weakened due to chemicals or sunlight. They must also be replaced if metal parts are deformed or rusty.

Belt not valid after date can be extended five years.

CK-T 0.4.1.3 Marking of damaged belts, national regulation

Marking will be done to harnesses that are damaged or worn in such a way that they do not meet the requirements in NEZ safety regulations. The marking will be done on both sides of all harnesses near the buckle, with white paint. Marked equipment may not be used in any motor sport context.

CK-T 0.5 Scrutinizing and technical inspections

Before competition, participating cars will undergo scrutinizing. The inspection will, apart from the driver's personal equipment, cover specified requirements in the technical regulations and ensure that the components do not have damages that may involve a safety risk. Special attention will be devoted to possible cracks on chassis and roll cage. A car that does not meet the technical requirements or has damages that involves a safety risk for the car's driver or any other driver is not to be permitted to participate in competition.

Drivers are obliged to provide a vehicle identification book (also could be named as "Sporting technical passport") of the car at scrutinizing.

The vehicle identification book or technical passport should be issued by participant's ASN.

On the car's roll cage, however not on a detachable bar, near the hood lock mechanism shall the vehicle identification book number or frame number be punched on the tube at visible place. The frame number on roll cage should match frame number stated in the vehicle identification book". **In identity book must be presented place for crash report, or small note in case of accident and in case of crash next event organizer must be informed about accident in order to make proper crosskart checking.**

CK-T 0.5.1 Scrutinizing

An appropriate place for scrutinizing shall exist in or in connection with the pit or the start and finish area. At the NEZ championship competitions shall a weighing unit be available. For measurement of the car's body/chassis shall a balanced flat surface exist which is the only place where measurements can be performed.

The scrutinizing can either be conducted as a simplified inspection or as a station system at the inspection place.

If a car is found not to comply with the technical regulations shall the clerk of the course and the technical controller be informed about the condition. Decisions concerning what action to take are made by the competition management.

Fuel testing is included as a part of the scrutinizing. If the fuel is deviating from what is allowed shall the driver change fuel, to fuel that is allowed before the start of the competition.

A car may not participate in practise/competition if it has not been approved in scrutinizing.

Drivers may only enter and scrutinizer one main frame per competition. No part of main frame can be changed during competition

Drivers that do not present their car at scrutinizing within the prescribed time may be denied to start by the competition management.

Inspection during training/competition will be implemented if a car has a fault/deviation according to the regulations. Such a fault/deviation shall be dealt with before starting again.

CK-T 0.5.2 Technical inspection

General

Post race inspection or random sample inspection during competition is referred to as a technical inspection. Technical inspection is conducted in order to examine if a participating car meets the technical requirements. Clerk of the course/competition management or judges makes decisions regarding technical inspections. The decision will be written in the records.

The inspection's implementation

At the technical inspection only concerned officials, concerned driver and the cars mechanic are allowed to participate. The person responsible for the inspection limits the number of participants.

If a car is found deviate from the rules a careful record shall be established that details what the deviation is, used measurement method, used measuring instruments/interpreters, measures and assessed tolerances in the measures and reference to rules/homologations.

Is the post race inspection caused by a protest shall only those parts specified in the protest be checked. Records shall be established in this case irrespective of results.

For fuel inspections see "Manual for fuel samples" on NEZ homepage. As selection instrument the Digatron DT-47 FTD may be used (manual exists on NEZ: s homepage, Karting- rules). Technical controller also has the possibility to take samples and if the result deviates from the approved values measures will be taken.

A copy of the record is given immediately to the competitor and the person who decided about the inspection. The original is retained by the organizer.

Speed control with laser

Speed control shall be done with laser pistol type "Bushnell Speed Radar Gun" under following directions:

*Speed control shall be done by same person all day

*Pistol shall be hold by hand

*Speed control shall not be done downhill

*Speed control shall be done in the driving direction +/- maximum 10 degrees

*Area between car and pistol shall have open air (not through window, trees etc)

*The organizer is responsible for inform the driver only if speed is to high

*Speed radar gun indicator show km/h without decimals.

*Speed radar gun maximum deviation is +/- 1,6 km/h. The deviation is included in the max speed 80km/h in class 85 and 60km in class Mini.

~~Speed control with GPS~~

~~Cars in Mini and 85 class shall be equipped with GPS data log for top speed control around the whole track. Type Qstarz model BT-Q1000EX or XT~~

~~GPS unit shall be located close to main roll tube with easy access for scrutineer staff to take out the card for check whenever they want.~~

~~It is the driver responsibility to ensure the GPS works and show data from the whole circuit. If top speed exceed more than 0,5 km/h driver will loose points and / or position.~~

~~Scrutineer staff is whenever free to clip external GPS on a car.~~

~~If track have steep downhill making overspeed peak organizer can make exception, maximum 20 meters~~

~~<http://www.qstarz.com/Products/GPS%20Products/BT-Q1000EX-10HZ-F.html>~~

~~<http://www.qstarz.com/download.php>~~

~~In case of force major factors, organizer still can use laser pistol type “Bushnell Speed Radar Gun”~~

~~The organizer is responsible for inform the driver only if speed is to high.~~

Later performed inspection

If the inspection cannot be completed immediately, the car as a whole or parts of it may be retained during a reasonable time by those that will carry out the inspection. If deemed appropriate parts may be sealed awaiting a final inspection.

The competitor is obliged to organise personnel and equipment that is needed in order to achieve the aim with the inspection. Concerned competitor and mechanic shall be allowed to participate in the inspection.

Further measures, penalty

The person who decided about the inspection decides on the basis of the result about further measures. Competitors who do not follow decisions about technical inspection will be disqualified and to be reported to his/her national ASN for punishment.

Technical error regarding engine volume, engine carburettor, gasoline quality or tyre quality shall always be punished by exclusion from the hole event with no possibility to remove event regarding calculating of championship total points.

Records and the decisions concerning penalties will be enclosed in the competition report.

Compensation of costs

No compensation is made for refitting of parts at a technical inspection.

If the decision about a technical inspection was based on a protest from a co-competitor, and no technical faults are established, the co-competitor pays the refitting, however no more than what a corresponding standard part costs to assemble at an authorised brand workshop.

The competitor is responsible for possible costs for transportation of the car if the control is implemented at a later occasion.

If it is established that the fuel is not approved at a fuel analysis the competitor pays the cost for analysis.

CK-T 0.6 Driver's personal safety equipment

Below stated personal security equipment that is the mandatory minimum requirement at practise/competition. Driver shall bring all safety equipment and wear minimum complete overall and shoes during scrutinizing. Safety equipment not according to regulations can be occupied by scrutinizers until competition is finish

Fire retardant overall
Shoes
Gloves
Balaclava
Neck brace
Helmet
Protective eyewear

Fire retardant overall

At NEZ competitions the overall must be homologated and approved by FIA according to the FIA 1986 or 8856-2000 standards. The labelling for FIA-homologation shall be embroidered on the outside of the collar's back and to include the manufacturer's name ... or 2 layer overall according to the standard EN 533 index 3.

In Mini and 85 class single layer overall is allowed if completed with underwear of Probane or Nomex.

CIK-approved overall is not allowed. For all overalls applies that these are designed and sewn so that they protect the entire body including neck, ankles and wrists. The overall may not be a two-piece type.

Fire retardant underwear

Underwear made of NOMEX, or cotton, is recommended. Nylon or corresponding materials are prohibited

Fire retardant socks

Shall be made of the same material as the under wear.

Shoes

Must be made of fire retardant materials and shall protect the entire foot including the ankle (boot type)

Gloves

Gloves are free, recommended Nomex, and cover wrists and overlap the overall's sleeve.

Balaclava

Must be made of fire retardant materials, type NOMEX FIA approved Standard 8856-2000, and cover central and back of the head entirely and overlap other equipment.

Neck brace

Mandatory, shall be used both during practise and competition.

So called HNRS/FHR (HANS) -protection is strongly recommended.

Helmet

Full face helmet with either face mask or integral protection fastened on the helmet that is protection for the driver's teeth. **Allow helmets from karting special designed for children and youth. Snell K2015, Snell SA2015, FIA/Snell CMR2007 Homologation.**

Possible fastening point for HANS / FHR must be done original and documented from factory.

Helmet made for HANS / FHR is recommended together with HANS / FHR of type hybrid.

Roll off is mandatory on helmet with visor.

Weight of helmet with HANS / FHR is free.

Weight of helmet without HANS / FHR is maximum according list below and shall be the total weight, which includes all type of extra equipment on the helmet as visors, protection glasses, integral protections etc.

Driver weight under 80kg = max 1350g helmet

Driver weight above 80kg = max 1500g helmet

Helmets should apply to following standards:

NORMES RECONNUES POUR LES CASQUES
RECOGNISED STANDARDS FOR HELMETS

LISTE TECHNIQUE N° 25 / TECHNICAL LIST N° 25

STANDARD DESIGNATION	LABEL EXAMPLE	Recognised to be used with FHR ¹	Recognised to be used without FHR
<ul style="list-style-type: none"> FIA 8860-2018 and 8860-2018-ABP 	<p style="text-align: center;">OR</p>	YES	YES
<ul style="list-style-type: none"> FIA 8860-2010 	<p style="text-align: center;">OR</p>	YES	YES
<ul style="list-style-type: none"> FIA 8860-2004 <div style="border: 1px solid red; padding: 2px; color: red; font-weight: bold; display: inline-block;">NOT VALID AFTER 31.12.2020</div>		YES	YES
<ul style="list-style-type: none"> FIA 8859-2015 		YES	YES
<ul style="list-style-type: none"> Snell SA2005 or SA2010 + FIA 8858-2002 	<p style="text-align: center;">+</p>	YES	YES

STANDARD DESIGNATION	LABEL EXAMPLE	Recognised to be used with FHR ¹	Recognised to be used without FHR
<ul style="list-style-type: none"> Snell SA2005 or SA2010 or SAH2010 + FIA 8858-2010 		YES	YES
<ul style="list-style-type: none"> Snell SA 2015 Snell Memorial Foundation 3628 Madison Avenue, Suite 11 North Highlands, CA 95660 USA www.smf.org <p>NOT VALID AFTER 31.12.2023</p>		NO	YES
<ul style="list-style-type: none"> Snell SAH 2010 Snell SA 2010 <p>NOT VALID AFTER 31.12.2023</p>		NO	YES
<ul style="list-style-type: none"> Snell SA 2005 <p>NOT VALID AFTER 31.12.2018</p>		NO	YES
<ul style="list-style-type: none"> SFI 31.1 SFI 31.1A SFI 31.2A SFI Foundation Inc 15708 Pomerado Road, Suite N208 Poway, CA 92064 USA www.sffoundation.com <p>NOT VALID AFTER 31.12.2018</p>		NO	YES

Protective eyewear

Eyewear type motocross or visor with roll-off **or** tear off system is mandatory.

Common regulations for marking of damaged helmets.

Helmets that are damaged or worn in such ways that they no longer meet the requirements of NEZ safety regulations will be marked. The marking will be done on helmets on both sides of the chinstrap. White paint (improvement paint) will be used.

N.B.! Marked equipment may not be used in any motor sport context.

CK-T 0.7 Start number

Allocated start number shall be placed on the roll cage's/body's upper rear part, alternatively on the top of roll cage/body. The number shall be easily visible from the sides. A number is also recommended on the body in front of the driver, visible from the front. The following

background colour applies for the number: rectangular white background minimum 20mm **outside** the number. The figures shall be black and the minimum height is 18 cm and the figures minimum width is 3 cm. All handicap drivers shall use yellow background

Participation in NEZ Championship demand using start number assigned from the www.nez-crosskart.eu

~~Swedish Federation SBF by Håkan Persson. Tlf+46768012665 or email: hakan.persson.1@hotmail.com~~

Start number is given according following series:

MINI: 01-099

85c: 1-99

125cc: 101-199

250cc: 201-299

650cc: 601-699

Senior: 801-899

CK-T 0.8 Vehicle identity book

See CK-T 0.5

CK-T 0.9 Communication

All wireless communication between drivers/competition vehicles and pit/competition area, and associated equipment, is prohibited during practise and competition.

CK-T 1 FRAME

CK-T 1.1 Structural parts and roll cage

The chassis shall be constructed as a space frame structure comprising welded round and/or square precision steel tubes of type DIN 2391, DIN 2394 or DIN 2395. Solid tubes DIN2391 / EN10305-1 / EN10305-4 is recommended. The roll cage shall be included as a part of the chassis (see fig. 1).

Structural parts of the chassis (A, B,C,G,I and J) shall be made of min. 30x2 mm (round tubes) or 30x30x2 mm (square tubes), where no other is stated.

Main roll hoop (J) shall be made in one-piece of round steel tube with minimum dimensions 30x2 mm. The roll cage must be equipped with two forward going braces (E) and two backward going braces (O) made of round steel tubes with minimum dimension 25x2 mm.

The backwards braces is recommended 30x2.

In case where the backward going brace is longer than 300mm measured horizontally between the "main roll-hoop" and "rear upper transverse tube" (L) a tube 25x2 shall be welded between these braces and continuing on each side down to the head tube (N). Max distance from head roll hoop 300mm.

Both forward braces must be able to open as a whole, from bottom position and up with a centre lock in the front (C). The upper joint must include bolt and nut or pin of aeroplane type. Locking and opening of braces shall be possible without any tools needed.

Alternative solution is to have forward braces as welded into chassis. In this case in both side of kart must be a doorway of maximum size 50x55 or 40x60 cm. Doorway can be closed by Nascar net or a door made of steel mesh, which can be opened without any tools needed.

The distance between front- or rear braces (E and O) may not exceed 300 mm. At the height of the drivers head between the rear braces and the main roll hoop there must be a tube (25x2 mm), which protects if the car is hit from the rear or any of the sides (K).

Between the lower and upper chassis framework a stress relief tube with minimum dimensions 25x2 mm must be mounted (D). The stress relief tube shall be placed so that they constitute a part of the chassis' framework.

The front vertical tube(s) between lower and upper main frame (A) can be replaced with minimum 2mm sheet profile if they include mounting for the fore carriage swinging arms. The lower chassis' framework (G) may comprise of tubes in minimum dimension 25x25x2 mm (square tubes) or 30x2 mm (round tubes). On non-motor side between lower and upper frame and between vertical pipe up to main rolling bar and up to opening bar a tube shall be welded so that wheel cannot go in.(fig 1F) A sheet measuring 150x300mm shall not be able to enter through the opening held vertically.

All classes: New frame build from year 2017 must be built with the two backward going braces (O) made in minimum dimension $\varnothing 30 \times 2$.

Tubes that are within the head's impact area must be equipped with an energy absorbing material. Minimum thickness must be 12mm.

Welding and tube bending must be done in a professional manner.

No parts of the chassis is allowed outside the wheels outer limit (applies even if the maximum are not used). The chassis may not have any sharp edges or to be designed so that unnecessary damage can be caused to co-competitors' cars.

MINI:

Small chassis: Structural parts of the chassis shall be made of min. 25x2 mm (round tubes) or 20x20x2 mm (square tubes), where no other is stated. Other tubes 20x2

Large chassis: Same as 85 class and up

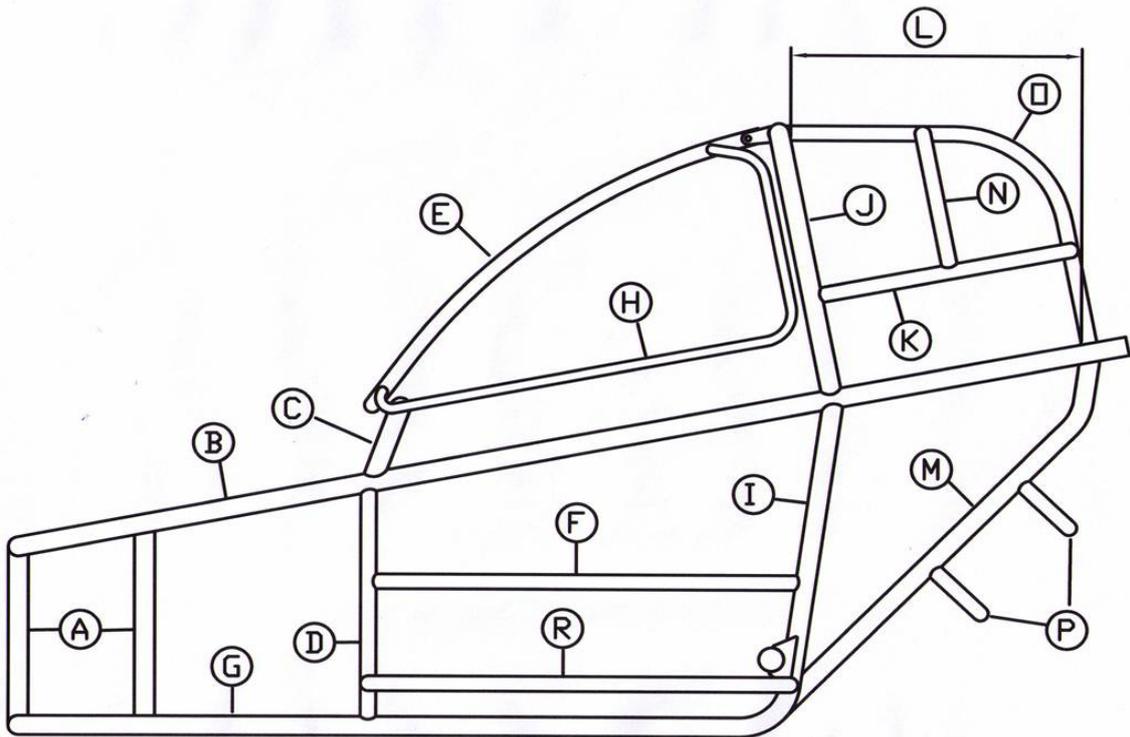


Fig1. Roll cage seen from the side

CK-T 1.2 Floor

The car must be equipped with full floor that covers the driver's legs and the driver's seat from beneath. Materials to be used: steel sheet minimum 2 mm thickness or aluminium sheet minimum 3 mm thickness (*see fig. 2*). The floor must be bolted to the chassis.

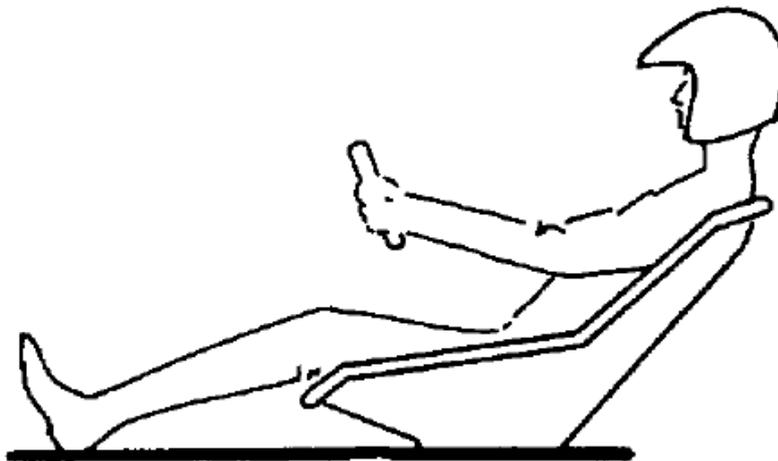


Fig2. Full floor beneath the driver.

CK-T 1.3

Protection or tube (Fig1 R) on both sides between front and rear wheels to prevent hook of rear wheel is prohibited. These tubes cannot exceed outside the wheels outer limit. Sharp edges which can destroy competitors cars is not allowed

CK-T 1.4 Protection against wedging under a competitor

Between the rear wheels tubes must be mounted so as to prevent co-competitors front wheels from damaging the driver's seat (fig1P). Tubes must be mounted to the frame (chassis) with a maximum 300 mm vertically or 150 mm laterally between the tubes. At vertically measurement the cross tube on the rear suspension can be included. Measurement shall be done when car is on ground without driver.

CK-T 1.5 Towing point

A towing point must be placed at/on the side of the front. Minimum diameter of the loop is 30 mm. The towing point may not reach in front of the front wheel pair. The loop must be painted in a different colour.

CK-T 2 WHEELS AND SUSPENSION

CK-T 2.1 Tires

A crosskart shall be equipped with 4 wheels. The wheel rims shall be in steel or aluminium and have a minimum width of 8" in rear and 5" in front, beyond that free. No part of tread may be worn so that the pattern is not visible. All types of pattern cutting is not allowed.

Following tires can be used in all classes:

Rear: Maxxis 225/40-10 32N C9273

Front: Maxxis 165/70-10 27N C9272

Following tires can be used in the class 250cc and above:

Rear: Goldspeed 225/40-10 32N C9203 397

Front: Goldspeed 165/70-10 27N C9205 397

MINI: Tires free as long as rim diameter not exceed 10"

Following tyre treatment is not allowed:

- A. Warming the tyres with any external source like cabinet, heating lamp or electric belt.
- B. Feed the tyre surface with any kind of fluid which give more or less grip.
- C. All kind of tyre cleaning after leaving competitors paddock location.
- D. Covering the tyre surface under transport **from paddock to starting grid.**
- E. Lifting up wheels up from ground under transport **from paddock to starting grid.**
- F. Organizer can allow tire spinning in prestart grid area in a special designated area or space. Must be mentioned in additional race regulations or in drivers briefing.**

In winter races when snow and ice tires with spikes are used.

Tire brand is free, size of rim max 10 inc.

Maximum number of spikes is 250 / wheel. Maximum height of the spikes is 9 mm.

CK-T 2.2 Suspension

The linkage between frame and wheels for the front and rear suspension is free.

The rear suspension must be designed as a unit, means both arms may not move independently (see fig. 4 and 5). Prop shaft /rear axle must solid i.e. manufactured in one-piece and only in material of steel/iron. Hollow axle is allowed. The front suspension is recommended with double front link arms.

Main rear suspension, front link arms, stub axle and prop shaft/rear axle may not be produced in any other material than steel/iron: Material in parts like bearings, bearing housing, ball joints, hubs, brake parts, bolts and nuts is free.

All parts for steering is free (see CKT 5.1)

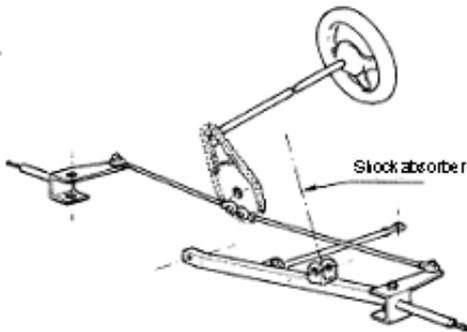


Fig 4. Design example of steering and front suspension.

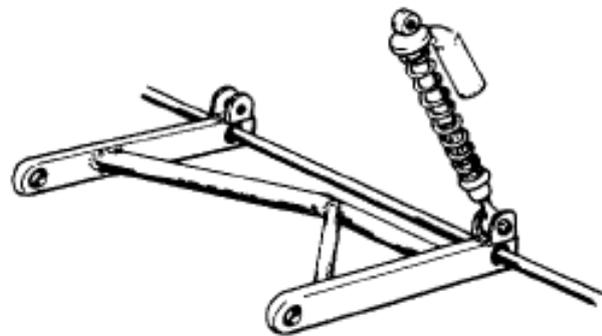


Fig 5. Example of a rear suspension (link with braces, spring and damper)

CK-T 2.3 Springs, shock absorbers

Must exist. The design is free. A stop between the rear suspension and framework must exist so as to prevent the suspension to hit the driver's seat in case of suspension failure. Only spring made of steel is allowed. At suspension compression, it is recommended that absorber is installed to avoid frame to hit the ground.

Suspension, shock absorption will be. The construction is free. It is not permissible to link the shock with each other, the shock absorbers to operate as individual units.

In 2021 class 85 and 125 max 3 way (high, low speed adjustment and return) adjustable shock absorbers can be used. Corner control or similar is not allowed.

CK-T 3 ENGINE ANF DRIVETRAIN

CK-T 3.1 Engine

Generally

The crankcase with, the gearbox integrated, shall come from a serial production motorcycle, karting or ATV engine available in or through at least one dealer in the NEZ zone. None engine and/or engine parts shall belong to a model newer than the year the participation find place. Engine shall be placed on the right or left side of driver. Exception is Mini class where it also can be placed behind the seat. Only 1-cylinder engines are allowed. Tuning and processing of the engine is free except in Mini and 85cc class (look below). No supercharging. Carburettor is free except in 125 classes where maximum diameter is 39mm. Air filter is free but recommended is using a filter box for sound isolation from intake and dirt protection. Sleeve valve engines are not allowed. Fuel injection of mechanical or other model is not allowed. Seal holes must be prepared in bolts in engine block and cylinder head.

Class 250 and 650

Electronic fuel injection is allowed in class 250cc and 650 cc. All 4-stroke engines shall have respiration container minimum 0,5 litre connected to engine or original

Class 85

In the 85 class no tuning is allowed, only original engine parts or copies with the same specification can be used. Engine, electronic shall be original. Exhaust is free. Example is no electric water pump, no adding or moving material on components, no special clutch and gearbox. Coil and CDI box shall be included with serial number. The only parts allow to change is the main jet and air filter. It is also allowed to change direction of exhaust if necessary for adaptation to frame.

Transmission for maximum speed 80 km/h or speed can be limited by tachometer/microprocessor **DH80-1570**. Producer and dealer is Dag Helgeland, telephone +4790916744. Email: helgelanddag@gmail.com.

Tachometer unit shall be placed on ~~the left side~~ front wheel stub axle.

Tachometer shall get signal from 4 point on the wheel hub, for example the 4 wheel bolts. Front tyre maximum circumference / rolling diameter shall not exceed 1570mm/500mm. If it is doubt about rolling diameter the circumference shall be used.

All cables and control panel shall be protected but at the same time visible for technical staff. Driver or others shall not be able to turn off unit from driving position.

Speed indicator is forbidden.

Class 125

~~From year 2021 in the 125 class no tuning is allowed, only original engine parts or copies with the same specification can be used.~~

Oval carburetor intake is allowed if not exceed area for 39mm round circle.

Determination of Carburetors Max intake:

Oval circle carburettor max intake formula:

$$S = \pi a^2 b^2$$

where:

a, b are the radius on the x and y axes respectively

$$\pi = 3.141592$$

Round circle carburettor max 39mm intake formula:

$$S = \pi R^2,$$

$$\pi = 3.141592$$

R= circle radius

$$S = 3.141592 * 19.5 * 19.5$$

$$S = 1194.590 \text{ mm}^2 \text{ (max allowed)}$$



Class Mini:

Following engines is allowed in Mini class:

2-stroke: Raket 120 with electric starter or magnet pull starter. Clutch: centrifugal with steel bricks

4 stroke: Type original one unit industry engine maximum 270cc with original centrifugal clutch. Only gasoline tank can be separated. Maximum speed 60km/h. **Speed indicator is forbidden.**

Cylinder Capacity

Cylinder capacity may not exceed:

- a) with two-stroke engine 85cm³
- b) with two-stroke engine 128 cm³
- c) with two-stroke engine 255 cm³
- d) with four-stroke engine 660 cm³
- e) with two-stroke engine in 650 class 306 cm³ (~~Minimum 290 cm³~~)

CK-T 3.2 Fuel System

The fuel tank must be made of metal or moulding plastic, and mounted in and protected by the chassis. It may not be mounted to the car's floors. If a plastic tank is used it shall be manufactured for such use (e.g. carting). The filler cap must seal tight.

A compensation canister holding may be placed beside the carburettor. Fuel lines must be of Nitril-type, not PVC, and be fastened and placed in such way that damages are avoided.

CK-T 3.3 Exhaust system

All classes:

The exhaust system with muffler must exist, however does not need to be the engine's original system. Recommended is muffler which can be opened for change of sound isolation.

Exhausts with mufflers may not end in front of a line drawn across the car through driver seat's most rear part and may only extend 10 cm, only the exhaust tail pipe, behind the car's rear restriction line. If the exhaust system is drawn through the cockpit it must be isolated. An organiser may, if the competition is done during special circumstances, impose in the competition invitation that a lower noise level than **95 dB (A)** will apply.

Mini:

Original according engines allowed in CK-T 3.1

650 Class (Recommended all classes)

Muffler shall be located 100% crosswise behind the seat. The inside diameter of mufflers metal tube outlet shall not exceed $\varnothing 48\text{mm}$. If exhaust system have two mufflers diameter shall not exceed $\varnothing 34\text{mm}$ each. Recommended is muffler which can be opened for change of sound isolation.

CK-T 3.4 Start system

Only engines with original starting systems as kick/electrical start are approved.

In 85, 125 and 250 class a possible electric starter / starter button shall not be available for driver when sitting in the car. Exception is Mini and 650cc class

CK-T 3.5 Cooling system

Unrestricted, however the radiator, hoses etc. must be drawn and mounted in such a way that damage is avoided. The radiator must be mounted to and protected by the car's chassis. The radiator cap must be well protected from impact e.g. if the car rolls-over.

CK-T 3.6 Electrical system

Kill switch that cut the engine's ignition system must exist and may not be of spring type that automatically goes back to start position. If the car has a battery, a master switch must be mounted that cuts all electricity. Both must be easily accessible by the driver when fully strapped in the safety harness as well as for officials.

For officials both switches must be close to each other and easy visible/accessible from outside without need of put the hand inside car. Both switches shall be located on the left side of the car.

They must be well marked with a red lightning bolt on a triangle shaped white bottom with blue lining. The triangle's side must be at least 100 mm and one the edges must point towards the switch. The triangle must be mounted on the body cover (see fig. 9).

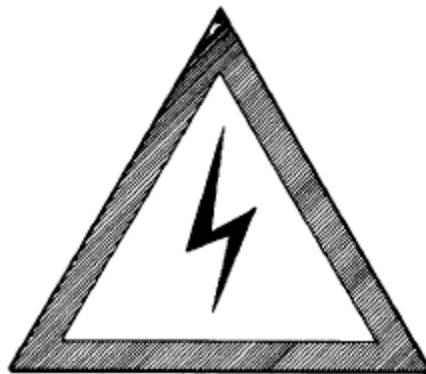


Fig 9. Marking of the master switch's location, (red lightning bolt on white bottom with blue lining) with a 100mm side.

CK-T 3.7 Power transfer

Generally

The power transfer between the engine and the rear wheels must be effect with chain without any intermediate pulleys and sprockets between the engine's pulley and the rear axle's sprocket. Wheel chain tightener with spring is allowed to avoid lack in chain during suspension movement.

Drives and chain protection must exist so that injuries are avoided. The chain cover shall be made in metal and in length located minimum between centre of engine rear mounting bolt and centre of axle. Top surface of cover shall be free of holes.

Gear ratio between engine and rear axle is unrestricted. All kind of electronic system which helps prevent wheel spin is not allowed. **Include any kind of launch control or traction control system.**

Gear shift shall be done only by mechanical transfer from gear handle to engine, without any kind of electronic. Exception is where driver is handicapped. Switch for gear shift ignition cut is allowed.

Class 85

Transmission between engine and rear axle is free as long as top speed not exceed 80km/h

Class Mini:

Transmission between engine and rear axle is free as long as top speed not exceed 60km/h

CK-T 4 BRAKE SYSTEM

CK-T 4.1 Foot brake

The foot brake system may only brake the rear wheels. The system must work efficiently i.e. fast and safely. In every other aspect it is unrestricted. The brake lines and hoses shall be mounted and drawn so that they are not damaged. A handbrake or similar must exist so as to prevent the cross kart rolling on the start line. Handbrake or similar is not mandatory if the hand clutch system is used.

On cars with 300ccm 2-stroke engines and all 4-stroke engines front brakes is mandatory **except in Senior class (40+)**. There shall be a hydraulic system with 2 separated circuits, one circuit for the rear wheels and one for the front wheels. Possibilities to adjust the balance between this two circuits is mandatory.

From 2021 front brakes will be mandatory in class 250.

CK-T 5 STEERING SYSTEM

CK-T 5.1 Steering

The steering must be actuated by a steering wheel. In every other aspect the design is free (see CK-T 2.2, fig. 4). The steering must be effective i.e. fast and safely.

CK-T 6 BODYWORK

CK-T 6.1 Coverage of chassis / mudguards

The chassis must minimum be covered with sheet metal or plastic material on the upper side in front the driver's seat and on sides between the wheels. Behind the main roll hoop, the roll cage may be covered if necessary openings for rear view exist. Mudguard above front wheels is not allowed, the whole tire shall be visible seen from above in all turning positions. Except this the design of body / mudguard is free. The bodywork may extend outside wheels restriction line maximum 200mm as long as total width x length not exceed 1500 x 2500mm. Only part of bodyworks plastic or fibre glass can extend outside, no metal is allowed.

CK-T 6.3 Seat

Recommended to have head side protection mounted in to the seat in all class.

Must be mounted to the chassis and of bucket type. The seat must allow for a comfortable driving position. The seat must be securely mounted in at least 4 positions without the risk of crevices at mounting points. Possible rubber and/or other distance between seat and frame

mounting bracket shall not increase a length of totally 50mm. ~~Minimum high of the seat is shoulder level.~~ **The seat height must above to the helmet. Suggested FIA or SFI approved seats.**

CK-T 6.4 Safety harness

See CK-T 0.4.1

CK-T 6.5 Safety net

Nets that prevent hands and arms to reach outside the roll cage must exist. The net must be placed between the main roll hoop and the front brace on both of the car's sides. The net must be manufactured of synthetic fibre material **or steel mesh. Steel must be welded.** The mesh size may not exceed 60 mm. A safety net made of steel may be mounted between front braces under during condition that the two braces can be opened without the need to disassemble the net.

CK-T 7 COMMUNICATION

CK-T 7.1 Rear-view mirrors, lamps, windscreen

Are not allowed for cross kart. Also type of transparent view screen, irrespective of material used is prohibited.

Windscreen and side window made of polycarbonate are allowed (only in winter races at snow and ice tracks). Windscreen min 3mm, side glass min 1 mm

Rear light

In all classes. A red rear light must be installed into the middle of the car. It must be on in practice and racing. It should be in use even car is stopped into the track and engine is not running.

Light must be approved by FIA. Manufacturer is free. List of FIA approved lights can be found from FIA Technical List number 19. https://www.fia.com/sites/default/files/lt_19-feu_pluie.pdf

CK-T 7.2 Wireless

Any wireless communication between the car / driver and pit / assistants is not allowed during qualification and final heats.

CK-T 8 INSTRUMENTATION

CK-T 8.1 Instrumentation, controls

Rev counter, temperature gauge etc. and controls may be used but must be placed in such a way that no sharp edges can cause unnecessary damage in an accident.

CK-T 9 OTHER

CK-T 9.1 Minimum weight

The minimum weight included the driver is following:

- Class Mini Small - Minimum 170kg
- Class Mini Large - Minimum 200kg
- Class 85 - Until 85cc - Minimum 230kg (100kg)
- Class 125 - Until 128cc – Minimum 255kg
- Class 250 - Until 255cc – Minimum 275kg
- Class 650 – 2 stroke
 - Untill 300cc - Minimum 280kg
- Class 650 – 4 stroke:
 - Until 460cc - Minimum 275kg
 - Until 510cc - Minimum 280kg
 - Until 560cc - Minimum 285kg
 - Until 610cc - Minimum **295kg**
 - Until 660cc - Minimum **305kg**

The minimum weight is defined as the weight during practise/qualification/competition. The car can be called in for weighing any time before, during or after practise/qualification/competition and must then meet the requirement. It is not allowed to fill up any fluids to any containers.

Weight in par antes (85cc class) is weight on the front wheels included driver. Weighing of front wheels shall be done with the car in horizontal position, driver sitting with helmet against headrest, hands on steering wheel and feet behind pedals. The weighing machine at the circuit shall be inspected by the competition management/head of judges. The actually weight on the event is counting. The driver is responsible for checking the weight before start compete.

CK-T 9.1.2 Ballast

Possible ballast weights shall preferably be tubes welded into mainframe to increase strength. Any other component which is only defined as mounted ballast shall anyway totally not exceed a weight of 20kg. Each unit maximum 5 kg.

Any ballast weights are required to be solid and uniform and must be mounted to the car's chassis/frame and/or bottom floor. In bottom floor maximum 10 kg is allowed. Ballast must be securely fastened with minimum M6 bolt and locknut x 4 per unit. If ballast is mounted in the floor minimum ø20mm washer shall be used under the floor on both weight and floor.

CK-T 9.2 Maximum dimensions

The car's maximum dimensions during competition may not exceed a width of more than 1500 mm and a length of more than 2100 mm measured on the wheels' tires/rims outer sides, which is measured on the tires' outer sides. When measuring, the front wheels must be in a position to drive straight forward (see CK-T 1.3 fig. 3 and CK-T 3:1 fig 6).

The bodywork may extend outside wheel restriction line maximum 200mm total as long as total width x length not exceed 1500 x 2500mm. Only part of bodyworks plastic or fibre glass can extend outside, no metal is allowed.

Mini small chassis: With maximum 1250mm. Length maximum 1800mm